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# COMPLETE SPECIFICATION.

## An Improved Artificial Leg or Crutch.

We, HERMANN HEINECKE of Provinzstrasse 48, Reinickendorf, Tailor, and BERTHA HERTING of Granatenstrasse 7, Reinickendorf, in the Empire of Germany, of no occupation do hereby declare the nature of this invention and in what manner the same is to be performed to be particularly described and  
5 ascertained in and by the following statement:—

The artificial legs hitherto used to replace the under part or upper part of the thigh have various inconveniences. They are generally buckled on the stump remaining after the amputation of the leg and cause considerable pain to the person and at times bleeding of incompletely cicatrized wounds. They do not give the  
10 body its various stability, as the binding with the stump can never be very solid. Also when walking the inflexibility of the foot is disturbing, as the sole of the foot remains always in the same position and therefore the passing of small obstacles lying in the way, as for instance stones, can only be effected by laterally avoiding them and never by walking over them.

15 The object of this application avoids these inconveniences the artificial leg not being fixed on the leg stump, but reaching bridge like up to under the shoulder, it supports sufficiently the whole body, it is not in close contact with the sensitive stump and will pass over small obstacles by the automatic movement of the foot, corresponding to the natural movement.

20 In the annexed drawing

Fig. 1 is a side view of the artificial leg.

Fig. 2 a front view of the artificial leg applied to a body.

The leg is essentially of the form of a crutch, consisting of several parts, the upper part of which consists of a flat iron bar *a* bent to correspond to the form of  
25 the side of the loins; this flat iron bar carries a stuffed arm support *b* which is held by a strap *c* to be buttoned over the shoulder. On the lower end of this flat bar is joined to the leg bar by means of a butt hinge joint *d* turning forward only in order that only a forward movement of the leg is possible. The leg itself consists of a strong wooden bar *e* which turning on the lower end round the hinge  
30 joint *f* carries the foot *h* also made of wood and covered with a shoe or boot *g*.

The automatic movement of the foot corresponding to the natural movement forms the chief characteristic of the leg. It is effected by means of the strap *k*, attached on the hook *i* and reaching over the other shoulder and by the spring *l* provided on the back part of the leg bar *e* and connecting the latter with the  
35 foot *h*. The remote end of the strap *k* is attached upon the back part of the bar *e* at about the level of the haunch and is regulated by the buckle *k*<sup>1</sup> in order that it may be stretched during the upright position of the body and vertical position of the leg: it pulls the foot *h* turning round *f* against the effect of the spring *l* with the top of the foot upwards into the position which a normal foot takes.

40 When the leg is moved forward the tension of the strap *k* diminishes as it is brought into an obtuse angle to the body, and the foot moves downwards by the effect of the spring *l*, when the leg is again in vertical position, it returns by the pull of the strap, again into its previous position. As these movements are not jerky but passing gently from one to the other, the walking is not limping, but  
45 quite natural.

The front of the foot may be lifted as far as wanted by pulling up the other

[Price 8d.]



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*Heinecke and Herting's Improved Artificial Leg or Crutch.*

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shoulder in order that obstacles lying in the way, as for instance stones can be passed over without any trouble. Also on sitting down, the artificial leg is not observable as then the strap *k* is completely loose and the forward turning of the leg bar *e* round the hinge joint *d* gives to the leg a natural appearance. Where there is a sufficient stump the bar *e* may be provided also with a butt hinge joint *m* 5 at the place of the knee which must only turn backwards.

The leg described on account of its light weight, having only a few parts in iron, is especially appropriate for weak persons, it surpasses in easy flexibility the complicated legs hitherto used.

This apparatus may also be used very well for crippled legs, without the latter 10 being amputated ; it replaces the shin bone and is used like a healthy leg.

Having now particularly described and ascertained the nature of this invention and in what manner the same is to be performed, we declare that what we claim is:—

An artificial leg or crutch consisting of a bar or hinged bars supporting the 15 armpit with a movable foot, which in the vertical position of the leg is held by a stretched strap fixed on it and passing over the other shoulder, and which in the forward movement of the leg is held stretched by means of a spring in such a manner that in walking the natural movement of the foot is imitated.

Dated this 10th day of March 1896.

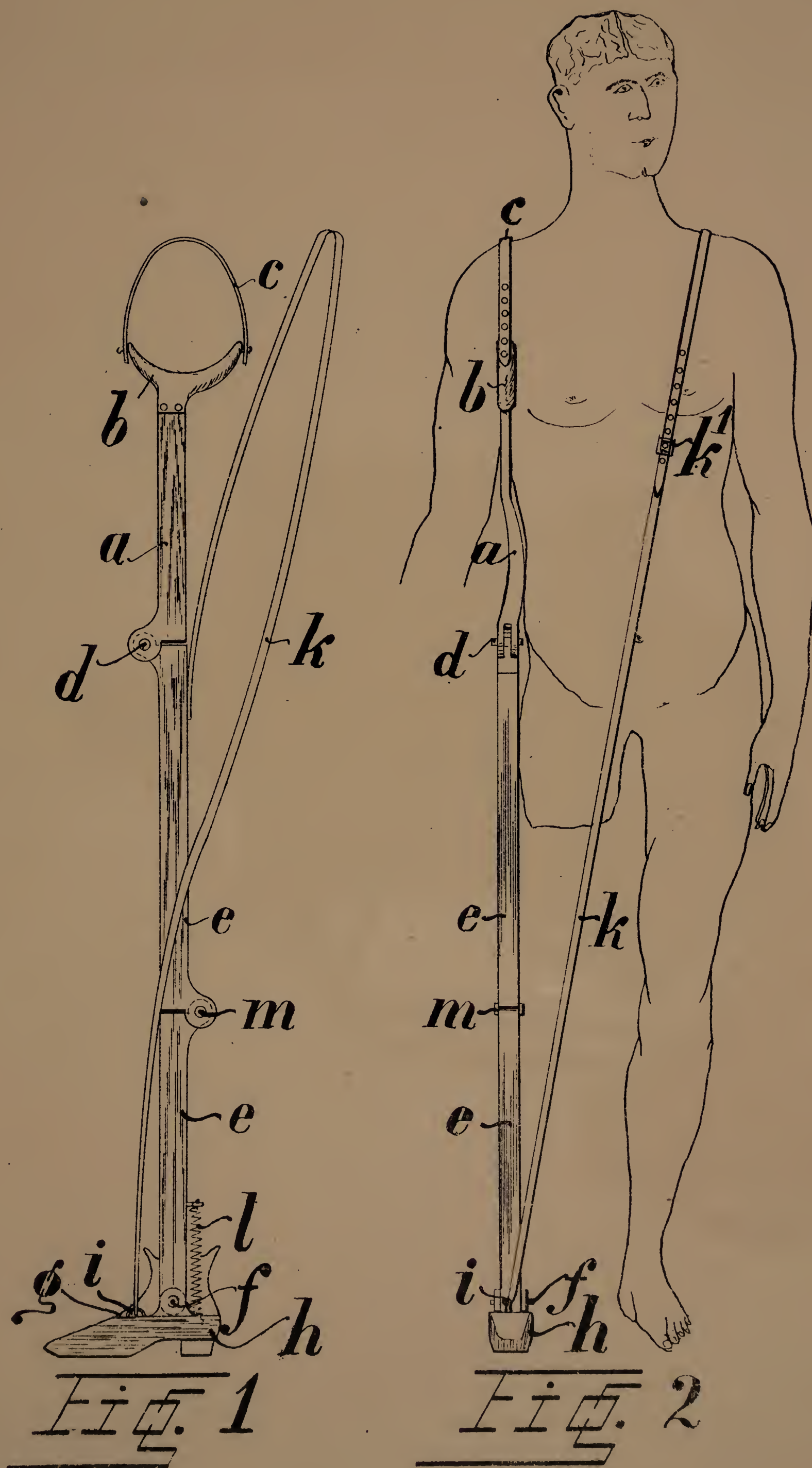
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[This Drawing is a reproduction of the Original on a reduced scale.]

